

BRUSHWELLMAN
ENGINEERED MATERIALS

Brush Wellman Inc.
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Salt Lake City, UT 84115
Phone 801/467-5441

RECEIVED
JUN 01 1987

May 29, 1987

**DIVISION OF
OIL, GAS & MINING**

Ms. Sue Linner
Permit Supervisor
Utah Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Dear Sue:

Enclosed is a memorandum summarizing the May 18, 1987 meeting between you and your staff and Brush Wellman representatives. Please review the memorandum and contact us as soon as possible if your recollect of agreements or conclusions differ from those presented. We plan to submit reclamation plan revisions to you on June 12. We hope this will allow your staff sufficient time to review these revisions prior to our visit to the mine on June 23, 1987.

Thank you for your cooperations in this matter.

Sincerely yours,

BRUSH WELLMAN INC.

Kenneth R. Poulson
dr

Kenneth R. Poulson
Vice President
Mining & Exploration

KRP/dt

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MEMORANDUM

TO: Robert Bayer

FROM: Brian Buck

RE: Notes for the May 18, 1987 Meeting With DOGM

ATTENDEES:

**DIVISION OF
OIL, GAS & MINING**

Ken Poulson, Brush Wellman (KP)
Lee Davis, Brush Wellman (LD)
John Grey, Brush Wellman (JG)
Susan Linner, DOGM (SL)
James Leatherwood, DOGM (JL)
Randy Hardin, DOGM (RH)
Rick Summers, DOGM (RS)
Bob Bayer, JBR Consultants Group (RB)
Brian Buck, JBR (BB)

(KP) The meeting was opened with remarks by Ken Poulson that described the history of Brush's permitting activity for the Topaz Mining Property since 1979. Ken described that it is Brush's position that tentative approval for the MRP has already been issued by DOGM and the remaining issue is agreeing on the type and amount of the reclamation performance surety. Brush recently determined that the approved reclamation plan did not appear to be suitable and that the January 12, 1987 submission constituted a revision to the reclamation plan. Ken suggested that the March 30, 1987 DOGM response to this plan included certain issues that have already been covered by past permit applications and or correspondence and that Brush is concerned that DOGM and Brush should work together to eliminate this duplication. He also indicated that he hoped that all of the March 30 issues would be discussed at the meeting and that following the meeting Brush would begin preparation of its written responses to the issues.

(SL) Sue Linner mentioned DOGM has had problems reviewing the Brush file because of the amount of correspondence and application narrative contained in separate documents within the file. She recommended that the problem with apparent duplication of review could be resolved by Brush combining certain major documents from the past into one document at this time

(RB) Brush will provide copies of its May 17, July 30 and August 1, 1985 correspondence to DOGM in the form of an appendix which would be added to the January 12, 1987 submittal.

(SL) Sue asked that these letters and other previously submitted documents be combined into one stand-alone document.

(KP) Ken stated that Brush does not recognize what previous documents, other than the 1985 correspondence ought to be included in the aforementioned appendix and requested DOGM's suggestions.

(SL) DOGM would provide recommendations on this matter.

(RB) In response to RS's comment on Rule M-3(1)(d) there are no lakes, rivers or reservoirs in the area. Brush's July 30, 1985 letter to DOGM stated that there are no springs or streams in the area and the water in the bottoms of the pits is present seasonally. Roads and buildings are shown on Plate 2.2-1 of the January 12, 1987 submission. There are no electrical transmission lines in the area.

(RS) Rick said that he was satisfied with this verbal response.

(RB) In response to Dave Darby's comment of Rule M-3(1)(d), the potential impact of mining on the well in Section 31, T12S R12W is described on page 3 of Brush's July 30, 1985 letter. The well is now owned by the BLM as is no longer used due to the brackish nature of the groundwater.

(SL)&(RS) The DOGM is satisfied with this response particularly because the well in question is no longer in use.

(RS) Rick indicated that he thought the hydrology portion of the reclamation plan revision was acceptable as is. He will want to visit the property to observe a few of the major drainages that either are or will be impacted by the operations to determine if the proposed hydrology plans are suitable. He will also contact the State Engineer on water rights issues.

(RB) In response to Lynn Kunzler's comment on Rule M-3(2)(e), Brush agrees to crimping mulch on level dump areas where surface roughness does not inhibit operation of the equipment. Where the surfaces are very rough with large rocks, the crimping equipment will be ineffective. Therefore Brush does not propose to crimp in these areas.

(SL) Sue asked Jim if he thought crimping mulch was very important even on the flat areas particularly in light of the potential surface roughness.

(JL) Jim asked how much precipitation falls annually and in the larger storms. He also wondered how much crusting might occur on the topsoil surface after a wet period.

(KP) Ken answered that he would be surprised if the annual precipitation exceeded 6" although it was possible to get 1" storm events.

(RB) The soil will be alluvial in nature and is not expected to form durable crusts.

(RB) Brush does not agree that net or tacifier is required on the topsoiled dump outslopes because the soil is expected to settle into the depressions between large rock fragments. This will have the effect of holding the soil and reducing erosion but it will also preclude the ability to crimp the mulch.

(JL) It is possible that application of mulch on the slopes in these conditions is not going to be beneficial. He will discuss the matter further with Lynn Kunzler.

(RB) In response to L. Kunzler's comment on Rule M-3(2)(f), Brush will commit to seeding in the fall or winter.

(SL) The DOGM is not looking for this simple commitment but rather a generic reclamation schedule describing the sequencing and time periods of various reclamation activities.

(RB)&(KP) A detailed reclamation schedule is located in Table 7.1-1 of the January 12, 1987 application. This schedule shows all of the requested information.

(SL) Sue will make sure that Lynn reviews Table 7.1-1 and that it is possible that he did not know it was in the document.

(RB) In response to RS's comment on Rule M-3(1)(h) Brush will provide a narrative describing the use of the water from the pits for road watering.

(RS) This will be a satisfactory response to his comment. He also stressed that he is not now suggesting that Brush commit to a water quality monitoring program in the pits but rather that Brush should submit copies of available water quality data for DOGM's review. He will look at the data and determine if any further water quality testing is warranted.

(RB) In response to RH's comment on Rule M-5, Brush will prepare the bonding estimate when plan concepts are agreed to with DOGM.

(RH) This is acceptable to him.

(RB) In response to RH's comments on Rule M-5 and Rule M-10, Brush maintains that the maps that have already been submitted are satisfactory for reclamation planning and that there are no other maps that are significantly better. The detailed topo maps that RH referred to in his comment are not contiguous and after final mining, are not even accurate.

(RH) The maps submitted in the past by Brush are not detailed enough in showing the heights of dumps and pit walls. The DOGM needs more detail in order to determine accurate bonding costs and to track the progress of the mining and reclamation.

(LD) Lee described how the pit maps are produced and used and how final mining alters the bottoms of the pits after the topo maps are produced.

(RB) The present maps were produced from recent aerial photos and are an accurate representation of the property layout and sizes of the present disturbances. This level of accuracy should be sufficient for reclamation planning and bond estimate. The annual reports will contain the amounts of topsoil, overburden and ore moved along with the reclamation progress. This information should be sufficient for the DOGM to track the progress of the operation without additional maps.

(RH) Would Brush consider flying the entire property and making a map of the operations?

(BB)&(LD) producing a topo map of the entire property is not required for mining operations because the individual pits and dumps are spread out over a large area. To produce a topo map of the ground in between the individual pits would be extremely expensive and unnecessary because the intervening ground is not disturbed.

There was no further discussion of this issue.

(RB) In response to RH's comments regarding Rule M-10(2)(b), Brush will prepare a narrative describing the reclamation of the landfill and will include a copy of the approved landfill permit.

(RH) This would be acceptable to the DOGM.

(RB) In response to RH's comment on Rule M-10(3), JBR has contacted the State Engineer's office and confirmed that the State Engineer has no regulatory authority under dam safety regulations for the water in the mine pits. The Bureau of Water Pollution Control has no authority over same because the water is not wastewater but rather, natural runoff. The Division of Wildlife Resources has no regulatory authority over mining. However the fact that the antelope and chukar populations appear to be enhanced in the vicinity of the pits should be recognized as a potential benefit to the local wildlife.

(RH) Brush should send to DOGM copies of written correspondence from these agencies signifying their opinions on the matter of the water in the pits.

(BB) It is not Brush's responsibility to make inquiries or applications to these agencies when it is apparent to Brush that the agencies have no authority in these matters. If the DOGM has the need through agreements to coordinate with these agencies, it should do so directly.

There was no further discussion of this issue.

(RB) In response to RH's comment of Rule M-10(4), the slope angle of the dumps has been previously approved by DOGM and is not at this time being revised in any way by Brush. Brush is proposing to construct berms at the tops of the tuff-covered slopes to control runoff and reduce erosion of the slopes. To comply with RH's comment on rounding these slopes would be counter-productive.

(RH) Considering this additional information, DOGM can agree to this configuration for the tuff-covered dump slopes, but what about the other, rock-covered dump slopes?

(KP) The top areas of all of the dumps are very large compared to the area of the slopes and can generate large amount of runoff. In the past, even rock-covered dump slopes have been eroded. Brush has begun to install berms and depressions along the tops of these dumps to reduce this effect and regrading these slopes to a rounded configuration could be detrimental.

(RH) This may be acceptable to the DOGM as long as the slope stability is assured by either geotechnical analyses or historical data.

(KP) There have never been any mass stability problems regarding the dump slopes and Brush would be happy to include statements to this effect in the plan.

(RB) In response to RH's comment on Rule M-10(5), Brush does not feel that there is any problem with pit wall stability and upon reclamation, the public safety will be appropriately protected with safety berms around the tops of the highwalls.

(RH) The rules require some justification for leaving the highwalls at slopes greater than 45°. This can be complied with by either supplying geotechnical analyses or historical observations.

(LD) The pit walls have performed very well over the years and are apparently very stable except for the local instability near faults. Brush can provide a narrative describing this fact if this will be acceptable to DOGM.

(KP) Another fact bearing on this matter is that MSHA has never mentioned any concerns with the pit walls as far as safety is concerned.

(RH) If Brush would provide this historical description of the apparent pit wall stability, this should be satisfactory to the DOGM.

(RB) In response to RS's comment on Rule M-1(7), Brush will modify the present narrative about roads to include a commitment not to restrict drainages. Brush would also like to remind the DOGM that many of the roads will be left for a continuing public use.

(RS) This response should be acceptable to the DOGM.

(RB) In response to RS's comment on Rule M-10(11), Brush will wait for Mr. Summer's field visit to discuss this further.

(RS) The use of perimeter berms at the bases of the dump slopes appears to be an acceptable method of sediment control and he will inspect this practice in the field.

(RB) In response to Lynn Kunzler's comment on Rule M-10(12), Brush will develop a formal request for variance from this rule for all existing tuff-covered dump areas and existing and future rhyolite-covered dump slopes that will not be topsoiled.

(SL) Additional clarification appears to be in order, on a map and in the text, for precisely those areas that will be included in the variance request.

(JL) It would also be advisable to clarify from what areas the topsoil will be removed.

(RB) Brush will review the plan and look into the appropriate clarifications for both of these points.

(RB) In response to Lynn Kunzler's comment that future revisions of the reclamation may be in order, Brush would like to state that it will not agree to any future plan revisions, based upon the present information.

(SL) The DOGM would like to see Brush keep an open mind on the specific reclamation techniques to be used in the future to take advantage of any technological advances that may enhance the potential reclamation success.

(BB) Brush has conducted extensive analyses of the long-term test plots as well as detailed soils analyses of the tuff. It is Brush's opinion that this material cannot be reasonably reclaimed now or in the future without the application of thick topsoil or large amounts of irrigation water, neither of which are available at the site. Therefore, Brush will not agree to any future reclamation responsibility for this material.

(SL) The DOGM does not argue with Brush's position on reclaiming the tuff but is recommending that Brush be flexible on those areas to be topsoiled.

(RB) Perhaps both sides of this issue may be satisfied if Brush accurately describes the reclamation progress it is making in the future annual reports. If the reports indicate that there may be revegetation problems, the DOGM can discuss possible solutions with Brush at that time. After all, Brush will need to achieve the reclamation success standard that is agreed to by the DOGM or the bond cannot be released.

(SL) This should be an acceptable strategy for the DOGM.

(RB) In response to JL's comment on Rule M-10(14), Brush feels that the soils data indicates that the soils are not high in Ca^{++} and the use of sulfur coatings on the urea pellets is not expected to generate sufficient amounts of sulfuric acid to produce much gypsum.

(JL) If you are not trying to produce gypsum, then why add CaCO_3 ?

No one knew the precise answer for this question and it was agreed to have Joe Jarvis contact JL with the appropriate response.

(RB) No soil borrow areas are within the stony soils. To clarify this Brush will prepare a soil stripping and redistribution map.

(RB) Brush will check with the laboratory to determine if the CEC for sample BW-1 is correct. Brush does not agree with the DOGM's comments on the validity of the other analyses.

(RH) Brush is requesting that significant portions of the file be kept confidential. To ensure this, Brush should inspect the DOGM files and extract the confidential information. This information should then be resubmitted in a separate binder for the confidential file.

(RS) Based on what he knows from the discussion, Brush should look into a variance for the impoundments under M-10(13).

A field trip to the mine was tentatively set for June 23.